

Dongfeng Wu

Curriculum Vitae

Department of Bioinformatics and Biostatistics Office: 502-852-1888.
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University of Louisville Email: dongfeng.wu@louisville.edu
Louisville, KY 40202 Citizenship: Naturalized Citizen of the U.S.

Education:

B.S. 1990 Probability and Statistics, Peking University, P.R. China.
M.S. 1993 Probability and Statistics, Peking University, P.R. China.
M.A. 1997 Statistics, University of California, Santa Barbara.
M.S. 1999 Computer Science, University of California, Santa Barbara.
Ph.D. 1999 Statistics, University of California, Santa Barbara.
Dissertation: Some contributions to the study of wavelet regression.

Positions Held

- **07/2021-Present** **Professor (with tenure)**, Department of Bioinformatics and Biostatistics, School of Public Health and Information Sciences, University of Louisville.
- **07/2014-06/2021** **Associate Professor (with tenure)**, Department of Bioinformatics and Biostatistics, School of Public Health and Information Sciences, University of Louisville.
- **09/2007-06/2014** **Associate Professor (tenure track)**, Department of Bioinformatics and Biostatistics, School of Public Health and Information Sciences, University of Louisville.
- **03/2008-10/2018** **Member**, Prevention and Control program, James Graham Brown Cancer Center, University of Louisville.
- **08/2001-08/2007** **Assistant Professor (tenure track)**, Department of Mathematics and Statistics, Mississippi State University (tenured and promoted to Associate Professor in May 2007).
- **01/2007-08/2007** **Fellow**, Institute for Digital Biology, Mississippi State University.
- **08/2006-04/2008** **Member**, Center for Computational Sciences, Mississippi State University.
- **01/2000-08/2001** **Research Associate**, Dept. of Biostatistics, University of Texas, M.D. Anderson Cancer Center. Houston, TX.
- **06/1999-09/1999** **Statistical Consultant**, Dept. of Statistics and Applied Probability, University of California, Santa Barbara.
- **06/1998-09/1998** **Intern** in Computer Science, Connected Systems Co., Santa Barbara, CA.
- **06/1997-09/1997** **Research Assistant**, Dept. of Political Science, University of California, Santa Barbara.
- **09/1995-12/1999** **Teaching Assistant**, Dept. of Statistics and Applied Probability, University of California, Santa Barbara.

Honors and Awards:

- Certificate of Completion in Leadership & Innovation in Academics Matter (LIAM) course. University of Louisville, Health Science Center. July 2022.
- U.S. Provisional Patent. Title: A Probability Method to Determine the Timing of Screening for Cancer Screening. Inventor(s): Dr. Dongfeng Wu. Serial No. 63/150,676. UofL's ref. # 21046-01. Filing date: February 18, 2021. By Patent Law firm: Thomas/Horstemeyer, IP Attorneys.
- 2020-2021 Student Champion: recognition for devotion to student success in the 2020-2021 academic year and for vital contributions to making the University of Louisville a great place to learn.
- 2017-2018, 2016-2017, 2011-2012, Faculty Favorite: faculty and instructors who were recognized and nominated by students as making a difference in their learning. The University of Louisville, Delphi Center for Teaching and Learning.
- U.S. Provisional Patent: System and Method for Determining a Lead Time Probability Distribution for Use in Chronic Disease Screening Programs. Filed through MSU Office of Intellectual Property and Technology Licensing, 2005.
- Academic Excellence Fund, College of Arts and Sciences, Mississippi State University. 2002, 2004, 2005, 2007.
- Ten gold and two silver medals (including 4 relays) at the 2017 Northern California Chinese Culture - Athletic Federation (NCCCAF) Swimming Meet, women's 30-39 age group, August 6, 2017. <http://www.nccaf.org/docs/swim/2017-ranking-adult.pdf>
- Seven gold medals in women's swimming at the Mississippi State Univ. 2nd International Campus Games. Oct. 2005. (25-yd. and 50-yd. freestyle, 25-yd. backstroke, 25-yd. and 50-yd. breaststroke, 25-yd. butterfly stroke, 100-yd. individual medley)
- Five gold medals and one silver in women's swimming at the Mississippi State Univ. 1st International Campus Games. Oct. 2004. (25-yd. and 50-yd. freestyle, 25-yd. breaststroke, 25-yd. butterfly stroke, 100-yd. individual medley, 25-yd. backstroke)
- University of California Regents Fellowship, UC Santa Barbara, 1995-96, 1997-98. Twice.
- Wald Memorial Prize, for best performance in the Ph.D. Qualifying Examinations, Dept. of Statistics and Applied Probability, UC Santa Barbara, 1996.
- Guanghua Fellowship for Outstanding Students, Peking University, Beijing, P. R. China, 1990.
- Sports Fellowships (inter-collegiate swimming), Peking University, Beijing, P.R. China, 1986-1990.

Research Interests:

My main area of methodological research is in cancer screening probability modeling and Bayesian inference. I have published over 50 peer-reviewed journal articles/book chapters in this area, including *Biometrics*, *Statistica Sinica*, *Statistics and Public Policy*, *the International Journal of Biostatistics*, *Lung Cancer*, *Cancer Epidemiology*, *Cancer Causes and Control*, *Oncology Review*. The work in methodology development and application to screening cohort studies have given me great insight into practical issues in screening. In addition, the training that I obtained while completing the master's degree in Computer Science has strongly prepared me to carry out object-oriented programming in C/C++ and S-PLUS/R. I have completed one small grant R03 from NIH/NCI; I have one currently funded project R15 from NIH/NCI, on dynamically scheduling cancer screening exams based on one's screening history and other factors (09/2019 to 08/2022). My other research interests include statistical decision theory, statistical computing, wavelet regression, and statistical applications in the medical and engineering area.

Publications:

Book.

Probability Modeling and Statistical Inference in Cancer Screening. Signed the book contract and to be published by CRC Press, Taylor & Francis Group, LLC. The final version is due by 7/31/2023.

1. Book Chapter.

- [2] **Wu D**, Perez A. (2012). Chapter 24: Modeling and inference in screening: exemplification with the fecal occult blood test, p.473-490. *Colorectal Cancer-From Prevention to Patient Care*, Editor: Ettarh, R. (eds.) InTech Publisher. ISBN: 978-953-51-0028-7. February 2012.
- [1] **Wu D**, and Rosner GL (2010). Chapter 10: Probability modeling and statistical inference in periodic cancer screening, p.203-218. *Frontiers in Computational and Systems Biology*, Editors: J. Feng et al (eds.) Computational Biology 15. Springer, London, 2010. ISBN: 978-1-84996-195-0. June 2010.

2. Editorial/Opinion Articles:

- [8] **Wu D** and Kim S. (2020). Problems in the estimation of the key parameters using MLE in lung cancer screening. *Journal of Clinical Research and Reports*. 5(3). DOI:10.31579/2690-1919/117.
- [7] **Wu D** (2019). Scheduling mammogram and physical exam for a healthy woman. *Annals of Women's Health*. 2019; 3(1): 1016.
- [6] **Wu D** (2019). Add Onion to Your Dishes to Clean Your Arteries. *American Journal of Biomedical Science & Research*. 2019; 4(1). AJBSR.MS.ID.000744. DOI: 10.34297/AJBSR.2019.04.00074
- [5] **Wu D** (2016). Clinical impact: when to schedule for the upcoming screening exam? *Journal of Biometrics and Biostatistics*. 7:291. Doi: 10.4172/2155-6180.1000291.
- [4] **Wu D** (2015). Christmas time – some thoughts on research and funding. *Journal of Biometrics and Biostatistics*. 6:268. Doi: 10.4172/2155-6180.1000268.
- [3] **Wu D** (2013). To plant a tree or to grow some vegetables – some thoughts in research. *Annals of Biometrics and Biostatistics* 1(2):1005.
- [2] **Wu D** (2012). Overdiagnosis in screening: does it make sense? *Journal of Biometrics and Biostatistics*, 3: e110. doi:10.4172/2155-6180.1000e110.
- [1] **Wu D** (2011). Meeting the needs of medical research with statistical methods. *Open Access Medical Statistics*. 2011:1 1-1. Doi: 10.2147/OAMS.S20259.

3. Research Papers in Peer-Reviewed Journals.

- [53] **Wu D**. (2023). A probability method to schedule the upcoming exam for asymptomatic individuals in cancer screening. *Statistics and Its Interface*. Accepted. 1/16/2023
- [52] **Wu D**. (2022). When to initiate cancer screening exam? *Statistics and Its Interface*. Vol. 15, No. 4, 503-514. doi: <https://dx.doi.org/10.4310/21-SII716>. NIHMS ID:1831788.
- [51] **Wu D** and Kim S. (2022). Inference of onset age of preclinical state and sojourn time for breast cancer. *Medical Research Archives*, [S.l.], Vol. 10, issue 2, Feb. 2022. Available at: <https://esmed.org/MRA/mra/article/view/2665>. Doi: <https://doi.org/10.18103/mra.v10i2.2665>. NIHMS ID: 1793032.
- [50] **Wu D**, Rai SN, and Seow A. (2022). Estimation of preclinical state onset age and sojourn time for heavy smokers in lung cancer. *Statistics and Its Interface*. Vol. 15, No. 3, 349-358. NIHMS ID: 1734205.

- [49] Rahman F and **Wu D** (2021). Inference of sojourn time and transition density using the NLST x-ray screening data in lung cancer. *Medical Research Archives*. Vol 9, issue 5, May 2021. ISSN 2375-1924. Available at: <https://esmed.org/MRA/mra/article/view/2399> NIHMS ID:1734198. Doi: <https://doi.org/10.18103/mra.v9i5.2399>.
- [48] Liu R, **Wu D**, and Rai SN. (2021). Estimation of the lead time distribution for individuals with screening history. *Statistics and Its Interface*. Vol. 14, No. 2, 131–149.
- [47] Li X, **Wu D**, Cooper NGF, and Rai SN. (2019). Sample size calculations for the differential expression analysis of RNA-seq data using a negative binomial regression model. *Statistical Applications in Genetics and Molecular Biology*. Appeared online.
- [46] Liu R, Perez A, **Wu D**. (2018). The lead time distribution in the National Lung Screening Trial study. *Journal of Healthcare Informatics Research*. 2:353–366. <https://doi.org/10.1007/s41666-018-0027-8>
- [45] **Wu D**, Kafadar K, and Rai SN. (2018). Inference of long-term screening outcomes for individuals with screening histories. *Statistics and Public Policy*, 5:1, 1-10. <https://doi.org/10.1080/2330443X.2018.1438939>
- [44] Wang D, Levitt B, Riley T, **Wu D**. (2017). Estimation of sojourn time and transition probability of lung cancer for smokers using the PLCO data. *Journal of Biometrics and Biostatistics*. 8: 360. <https://doi.org/10.4172/2155-6180.1000360>
- [43] Cambon AC, Baumgartner KB, Brock GN, Cooper NGF, **Wu D**, and Rai SN. (2017). Properties of adaptive clinical trial signature design in the presence of gene and gene-treatment interaction. *Communications in Statistics – Simulation and Computation*. <https://doi.org/10.1080/03610918.2016.1275690>
- [42] Li X, Brock GN, Rouchka EC, Cooper NGF, **Wu D**, O’Toole TE, Gill RS, Eteleeb AM, Liz O’Brien L, Rai SN. (2017). A comparison of per sample global scaling and per gene normalization methods for differential expression analysis of RNA-seq data. *PLoS ONE* 12(5): e0176185. <https://doi.org/10.1371/journal.pone.0176185>
- [41] Liu R, Gaskins JT, Mitra R, and **Wu D**. (2017). A review of estimation of key parameters and lead time in cancer screening. *Revista Colombiana de Estadística (Colombian Journal of Statistics)*. Vol. 40. Issue 2. 263-278. DOI: <http://dx.doi.org/10.15446/rce.v40n2.60642>.
- [40] Li X, Cooper NGF, Shyr Y, **Wu D**, Rouchka EC, et al. (2017). Inference and sample size calculations based on statistical tests in a negative binomial distribution for differential gene expression in RNA-seq data. *Journal of Biometrics and Biostatistics*.8:1, 332. doi:10.4172/2155-6180.1000332.
- [39] **Wu D**, Liu R, Levitt B, Riley T, Baumgartner, KB. (2016). Evaluating long-term outcomes via computed tomography in lung cancer screening. *Journal of Biometrics and Biostatistics*. 7:1, 313. doi:10.4172/2155-6180.1000313.
- [38] Kim S, and **Wu D**. (2016). Estimation of sensitivity depending on sojourn time and time spent in preclinical state. *Statistical Methods in Medical Research*. 2016, Vol. 25(2), 728-740. DOI: 10.1177/0962280212465499.
- [37] Latif RK, Bautista AF, Duan X, Neamtu A, **Wu D**, Wadhwa A, Carter MB, Akca O. (2016). Teaching basic fiberoptic intubation skills in simulator: initial learning and skill decay. *Journal of Anesthesia*. 2016 Feb; 30(1):12-9. Doi: 10.1007/s00540-015-2091-z.. PubMed PMID: 26493397.
- [36] Liu R, **Wu D**, Zhang X, and Kim S. (2016). Compound Identification Using Penalized Linear Regression on Metabolomics. *Journal of Modern Applied Statistical Methods*. Vol. 15: Issue 1, Article 20. Available at: <http://digitalcommons.wayne.edu/jmasm/vol15/iss1/20>
- [35] Kim S, Jang H, **Wu D**, Abrams J. (2015). A Bayesian nonlinear mixed-effects disease progression model. *Journal of Biometrics and Biostatistics*. 6:271. doi:10.4172/2155-6180.1000271. PubMed PMID: 26798562; PubMed Central PMCID: PMC4718583.
- [34] Liu R, Levitt B, Riley T, **Wu D**. (2015). Bayesian estimation of the three key parameters in CT for the National Lung Screening Trial data. *Journal of Biometrics and Biostatistics*. 6: 263. doi:10.4172/2155-6180.1000263

- [33] Kendrick SK, Rai SN and **Wu D.** (2015). Simulation study for the sensitivity and mean sojourn time specific lead time in cancer screening when human lifetime is a competing risk. *Journal of Biometrics and Biostatistics.* 6:247. DOI:10.4172/2155-6180.1000247.
- [32] Cambon AC, Baumgartner KB, Brock GN, Cooper NGF, **Wu D,** and Rai SN. (2015). Classification of clinical outcomes using high-throughput informatics: part 2 – parametric method reviews. *Journal of Model Assisted Statistics and Applications.* 10(2):89-107. June 2015.
- [31] Cambon AC, Baumgartner KB, Brock GN, Cooper NGF, **Wu D,** and Rai SN. (2015). Classification of clinical outcomes using high-throughput informatics: part 1 – nonparametric method reviews. *Journal of Model Assisted Statistics and Applications.* 10(1): 3-23, Jan. 2015.
- [30] Kim S, Gaweda AE, **Wu D,** Li L, Rai, SN, and Brier, ME. (2015). Simplified warfarin dose-response pharmacodynamic models. *Biomedical Engineering: Applications, Basis and Communications.* 2015 Feb; 27(1). pii: 1550001 PubMed PMID: 25750489; PubMed Central PMCID: PMC4349334.
- [29] Chen Y, Erwin D, and **Wu D** (2014). Over-diagnosis in lung cancer screening using the MSKC-LCSP data. *Journal of Biometrics and Biostatistics.* 5:201. DOI: 10.4172/2155-6180.1000201.
- [28] **Wu D,** Kafadar K, and Rosner GL. (2014). Inference of long term effects and over-diagnosis in periodic cancer screening. *Statistica Sinica.* 2014. 24: 815-831.
<http://dx.doi.org/10.5705/ss.2012.067>
- [27] Ling J, King KM, Speck BJ, Kim S, and **Wu D.** (2014). Preliminary assessment of a school-based healthy lifestyle intervention among rural children. *Journal of School Health.* 2014; 84:247-255.
- [26] Jang H, Kim S, and **Wu D.** (2013). Bayesian lead time calculation for the Johns Hopkins lung project data. *Journal of Epidemiology and Global Health.* Vol. 3, 157-173. DOI: 10.1016/j.jegh.2013.05.001.
- [25] Kim S, Erwin D, and **Wu D.** (2012). Efficacy of dual lung cancer screening by chest x-ray and sputum cytology using Johns Hopkins lung project data. *Journal of Biometrics and Biostatistics.* 3:139. doi:10.4172/2155-6180.1000139
- [24] **Wu D,** Kafadar, K, Rosner GL, Broemeling LD. (2012). The lead time distribution when lifetime is subject to competing risks in cancer screening. *The International Journal of Biostatistics.* Volume 8: Issue 1, Article 6, ISSN: 1557-4679, DOI: 10.1515/1557-4679.1363, April 2012.
- [23] Luo D, Cambon AC, **Wu D.** (2012). Evaluating long term effect of FOBT in colon cancer screening. *Cancer Epidemiology.* 36 (2012), e54-e60. DOI: 10.1016/j.canep.2011.09.011.
- [22] Duan X, **Wu D,** Bautista AF, Akca O, Carter MB, Latif RK. (2011). Assessment of reaching to proficiency in procedural skills: fiberoptic airway simulator training in novices. *Open Access Medical Statistics.* 2011: 1, 45-50. DOI:10.2147/OAMS.S24625.
- [21] **Wu D,** Erwin D, and Kim S. (2011). Projection of long-term outcomes using x-rays and pooled cytology in lung cancer screening. *Open Access Medical Statistics.* 2011: 1 13-19. DOI:10.2147/OAMS. S22987.
- [20] **Wu D,** and Perez A. (2011). A limited review of over-diagnosis methods and long term effects in breast cancer screening. *Oncology Reviews* (2011) 5:143-147. DOI: 10.1007/s12156-011-0077-0.
- [19] Li C, Kong M, and **Wu D.** (2011). The statistical effects on measuring myocyte with different image zoom rates. *Open Access Medical Statistics.* 2011:1 3-12. DOI: 10.2147/OAMS.S20303.
- [18] Shows J, and **Wu D.** (2011) Inferences for the lead time in breast cancer screening trials under a stable disease model. *Cancers.* 2011, 3(2), 2131-2140; DOI:10.3390/cancers3022131.
- [17] **Wu D,** Erwin D, and Rosner GL. (2011). Sojourn time and lead time projection in lung cancer screening. *Lung Cancer.* 72 (2011) 322-326. DOI: 10.1016/j.lungcan.2010.10.010.
- [16] Chen Y, Brock GN and **Wu D.** (2010). Estimating key parameters in periodic breast cancer screening - application to the Canadian National Breast Screening Study data. *Cancer Epidemiology.* 34, 429-433. DOI: 10.1016/j.canep.2010.04.001.
- [15] **Wu D,** Erwin D, and Rosner GL (2009). A projection of benefits due to fecal occult blood test for colorectal cancer. *Cancer Epidemiology.* 33, 212-215. DOI: 10.1016/j.canep.2009.08.001.

- [14] Wu T, and **Wu D.** (2009). The structuralized statistical decision functions and their applications. *Journal of Shandong Normal University (Natural Science)*. June 2009. Vol. 24, No.2, 1-6. (in Chinese, with English abstract).
- [13] **Wu D,** Erwin D, and Rosner GL. (2009). Estimating key parameters in FOBT screening for colorectal cancer. *Cancer Causes and Control* (2009) 20: 41-46. DOI: 10.1007/s10552-008-9215-9.
- [12] Shi SQ, and **Wu D.** (2009). Modeling moisture absorption process of wood-based composites under over-saturated moisture conditions using two-part equations. *Wood Science and Technology*. Volume 43, Issue 1 (2009), 143-150. DOI: 10.1007/s00226-008-0201-x.
- [11] **Wu D,** Carino RL, and Wu X. (2008). When sensitivity is a function of age and time spent in the preclinical state in periodic cancer screening. *Journal of Modern Applied Statistical Methods*. Vol. 7, No. 1, 297-303.
- [10] **Wu D,** Rosner GL, and Broemeling, LD. (2007). Bayesian inference for the lead time in periodic cancer screening. *Biometrics*. Vol. 63, No. 3, 873–880.
- [9] Zhang Y, and **Wu D.** (2006). Methodologies to predict service lives of pavement marking materials. *Journal of the Transportation Research Forum*. Vol. 45, 5-18.
- [8] Wu J, **Wu D,** Jenkins JN, and McCarty JC. (2006). A recursive approach to detect multivariable conditional variance components and conditional random effects. *Computational Statistics and Data Analysis*. 50, 285-300.
- [7] Wu J, Jenkins JN, McCarty JC, and **Wu D.** (2006). Variance component estimation using the ADAA model when genotypes vary across environments. *Crop Science*. Vol.46, 174-179.
- [6] **Wu D,** Rosner GL, and Broemeling LD. (2005). MLE and Bayesian inference of age-dependent sensitivity and transition probability in periodic screening. *Biometrics*. Vol.61, No.4, 1056-1063.
- [5] **Wu D,** Wu X, Banicescu I, and Carino R. (2005). Simulation procedure in periodic cancer screening trials. *Journal of Modern Applied Statistical Methods*. Vol.4, No.2, 522-527.
- [4] Broemeling LD, and **Wu D.** (2005). On the power functions of Bayesian tests with application to the design of clinical trials: the fixed-sample case. *Journal of Modern Applied Statistical Methods*. Vol. 4, No. 1, 163-171.
- [3] **Wu D.** (2004). A visually adaptive Bayesian model in wavelet regression. *Journal of Modern Applied Statistical Methods*. Vol. 3, No. 1, 200-212.
- [2] **Wu D.** (2002). NORM thresholding method in wavelet regression. *Journal of Statistical Computation and Simulation*. 2002. 72 (3), 233-245.
- [1] Shen Y, **Wu D,** and Zelen M. (2001). Testing the independence of two diagnostic tests. *Biometrics*. Vol. 57, 1009-1017.

4. Research Papers in Peer-Reviewed Conference Proceedings.

- [1] Zhang Y, and **Wu D.** (2005). Development of methodologies to predict service lives of pavement marking materials. Preprint of the 84th Annual Meeting CD, the Transportation Review Board, Washington, D.C.
- [2] Zhang Y, and **Wu D.** (2003). Comparative analysis of retro-reflectivity of pavement marking materials. Preprint of the 82nd Annual Meeting CD, the Transportation Review Board, Washington, D.C.

5. Research Papers in Non-Refereed Conference Proceedings.

- [6] Wu D and Kafadar K. (2019). Scheduling of the upcoming screening exam using CT in lung cancer. *2019 Proceedings of the American Statistical Association, International Chinese Statistical Association Section*. Alexandria, VA: American Statistical Association. 2177-2186.

- [5] **Wu D.** (2014). Long term effects of periodic cancer screening for aged people with a screening history. *2014 Proceedings of the American Statistical Association, International Chinese Statistical Association Section*. Alexandria, VA: American Statistical Association. 793-804.
- [4] **Wu D,** and Rosner GL. (2010). A projection of true-early-detection, no-early-detection, over-diagnosis and not-so-necessary probabilities in tumor screening. *2010 Proceedings of the American Statistical Association, Biopharmaceutical Section*. 1144-1157. Alexandria, VA: American Statistical Association.
- [3] **Wu D,** Rosner GL, and Broemeling LD. (2006). Inference for the lead time in cancer screening. *2006 Proceedings of the American Statistical Association, Biometrics Section [CD-ROM]*, Alexandria, VA: American Statistical Association: 427-433.
- [2] **Wu D.** (2000). A visually adaptive Bayesian model in wavelet regression. *American Statistical Association, 2000 JSM Proceedings of the American Statistical Association, Bayesian Statistical Science Section*. Alexandria, VA: American Statistical Association: 108-113.
- [1] **Wu D.** (2000). NORM thresholding method in wavelet regression. *Proceedings of the 32nd Symposium on the Interface, Computing Science and Statistics*. Vol 32, 104-123. New Orleans, Louisiana (2000).

6. Technical Reports

- [1] Zhang Y, and **Wu D.** (2003). Development of trustworthy intermodal traffic measurement. A final research report submitted to the National Center for Intermodal Transportation (NCIT).
- [2] **Wu D,** Rosner GL, and Broemeling LD. (2001). Bayesian inference of age-dependent sensitivity, sojourn time and transition rate in screening. *Technical Report UTMDABTR-015-01, June 2001. Dept. of Biostatistics, Univ. Texas, M. D. Anderson Cancer Center.*
- [3] Broemeling LD, and **Wu D.** (2001). Power functions for Bayesian tests with application to the design of clinical trials: the fixed-sample case. *Technical Report UTMDABTR-016-01, July 2001. Dept. of Biostatistics, Univ. Texas, M. D. Anderson Cancer Center.*

7. Research Papers submitted or ready for submission

- [1] **Wu D** and Kafadar K. (2022). Dynamic scheduling for the upcoming exam in periodic cancer screening. Submitted to *Communications in Statistics-Theory and Methods*.
- [2] **Wu D.** (2022). When to initiate a screening exam if sensitivity is a function of sojourn time? submitted to *the International Journal of Biostatistics*.
- [3] **Wu D.** (2022). Dynamic scheduling for the upcoming cancer screening exam when sensitivity is a function of sojourn time. Ready for submission.
- [4] **Wu D.** (2019). Lead time estimation in periodic cancer screening using C++ with a R/S-PLUS interface. *Ready for submission.*
- [5] Li X, Rai SN, Rouchka EC, O'Toole TE, **Wu D,** Cooper NGF. (2020). Simulation-based and covariate-adjusted sample size and power calculations for two-sample RNA-seq data using generalized linear models. Submitted to *BMC medical research methodology*.

8. Abstract in Refereed Journals

- [1] Kim S, Gaweda AE, Wu D, Li L and Brier M. (2013). Simplified pharmacodynamic models for warfarin. *Clinical Pharmacology and Therapeutics* 93, S52-S86; doi:10.1038/clpt.2012.256.

Current Research Support:

NIH R15CA242482 (Wu, D.)

9/1/2019-8/31/2022

4.8 Calendar Mon.

No-cost extension to 8/31/2023.

Project Title: Dynamic scheduling of the upcoming screening exam based on screening history and other parameters. \$435,309

Description: The project is to develop statistical methods and software that can be used to make informed decisions regarding the future scheduling of screening exams for people with a history of negative screening results. Using cohorts from mass lung cancer screening trials (the National Lung Screening Trials, and the Prostate, Lung, Colorectal, and Ovarian Cancer Screening Trials for lung cancer part), the developed methods can be applied to other kinds of screening for chronic diseases. The specific aims are 1). to estimate the three key parameters in the eight cohorts. 2). to schedule the next screening exam dynamically for asymptomatic people with any screening history, and 3). To develop user-friendly software for Aims 2 and 3.

Role: Principal Investigator.

Pending Research Support:

NIH 1 R01 CA282073 (Wu, D.)

Title: Inference of the three key parameters, over-diagnosis, and optimal scheduling in ovarian cancer and its screening. Submitted 10/3/2022.

Completed Research Grants:

NIH R03CA115012 (Wu, D.) 4/1/2005-9/30/2007 4.8 Calendar Month

Project Title: Statistical inference for lead time in cancer screening. \$135,872.00

Description: The specific aims are to derive the exact probability distribution for the lead time in a periodic screening program and to derive its probability distribution; and to apply the proposed method to aid in developing the optimal design of periodic screening choosing screening time intervals.

My role: Principal Investigator.

The National Center for Intermodal Transportation (Zhang, Y.) 1.0 Calendar Month

12/1/2002-12/1/2003 \$89,974.00

Project Title: Development of Trustworthy Intermodal Traffic Measurement.

Description: The specific aim is to develop and test the intermodal traffic measurement and apply it to traffic data from highways and railroads.

My role: Co-Investigator.

Not Funded External Research Proposals:

1. National Cooperative Highway Research Program. (Buchanan, S.) 06/2002
Project Title: Color Effectiveness of Yellow Pavement Marking Materials.
2. NSF Proposal: 0321730 (Peng, Z.) 02/2003
Project Title: ISGA-PGR Proteome Analysis of Chromatin Associated Proteins in Arabidopsis and Rice (*Oryza sativa*)-Identities, Expression Levels, Localization and Functions.
3. NSF proposal: 0540272. (Thompson, D.S.) 03/2005
Project Title: DDDAS-TMRP: ICEMAN - An Ice-Management System for Uninhabited Aerial Vehicles (UAVs).
4. NSF proposal: 0536274. (Du, J.) 09/2005
Project Title: Bridging the gap between the mathematical classrooms and engineering applications: a case study for a probability and random processes course.
5. NIH/NCI: 1R21CA129794-01 (Wu, D.) 10/2006

- Project Title: When to schedule the next screening exam for an asymptomatic woman, given her screening history?
6. NIH/NCI: 1R01CA136850-01 (Wu, D.) 02/2008
Project Title: Probability Modeling and Statistical Inference in Periodic Cancer Screening.
 7. NIH/NCI: 1R01CA136850-01A1 (Wu, D.) 11/2008
Project Title: Probability Modeling and Statistical Inference in Periodic Cancer Screening
 8. NIH/NCI: 1RC1CA145672-01 (Wu, D.) 04/2009
Project Title: Evaluating Long-Term Benefits Due to Periodic Cancer Screening.
 9. NIH: 1R01 HL098752-01 (Linder, M.) 02/2009
Project Title: Application of an innovative pharmacogenetic modeling technique to pediatric warfarin therapy.
 10. KY Cycle 9: Investigator-Initiated Grant. (Wu, D.) 06/2009
Project Title: Probability Modeling and Statistical Inference in Periodic Cancer Screening
 11. NIH/NCI: 1R01CA153120-01. (Wu, D.) 11/2009
Project Title: Evaluating long-term benefits due to periodic cancer screening
 12. NIH: 1R01 HL098752-01A1 (Linder, M.) 05/2010
Project Title: Application of an innovative pharmacogenetic modeling technique to pediatric warfarin therapy.
 13. NIH proposal: 1R01CA** (Li, X.) 06/2010
Project Title: Hypoxia in Micrometastases.
 14. NIH: 1R18GM** (Latif, R.) 06/2010
Project Title: Simulator training to reduce central venous catheter related blood infections
 15. NIH: R01 (Wang, E.) 02/2011
Project Title: MicroRNAs, IGF-1 Signaling, and Neuronal Survival in Long-Lived Mouse Brain.
 16. NIH/NCI: 1R15CA167509-01. (Wu, D.) 06/2011
Project Title: Projection of outcomes in lung and colorectal cancer screening.
 17. NIH/NHLBI: R01. (Folz, R.) 02/2012
Project Title: Microfabricated chemoselective chip breath analysis for the early detection of lung disease in cystic Fibrosis.
 18. NIH/NCI: 1R03CA173081 (Wu, D.) 02/2012
Project Title: The impact of digital mammography on long-term outcomes in the diagnosis of breast cancer at a comprehensive cancer center.
 19. NIH: R21 (Gaweda, A.) 06/2012
Project Title: Reticulocyte based RBC production and lifespan estimation for personalized anemia management.
 20. NIH AHRQ R24 (Ramirez, J.) 12/2013
Project Title: Intravenous Cefazolin plus Intra-wound Powder versus Intravenous Cefazolin Alone for the Prevention of Surgical Site Infections in Spine Trauma Surgery.
 21. NIH R21 (Li, X.) 02/2014
Project Title: Visualization of Hypoxia in Brain Metastases of Lung Cancer.
 22. NIH R21 (Li, X.) 06/2014
Project Title: Tumor Hypoxia and Hypoxia-targeted Therapy of Micrometastases.
 23. NIH 1R15CA198834-01 (Wu, D.) 10/2014
Project Title: Over-diagnosis for people with and without a screening history in lung cancer.
 24. NIH 1R15CA206068-01 (Wu, D.) 06/2015
Project Title: Statistical Inference of Long-Term Outcomes in Lung Cancer Screening.
 25. NIH 1R15CA206068-01A1 (Wu, D.) 02/2016
Project Title: Statistical Inference of Future Outcomes and Dynamic Scheduling in Lung Cancer Screening.
 26. NSF DMS/NIGMS DMS-1661656 (Wu, D.) 09/2016

- Project Title: Probability Model and Statistical Inference of Long Term Outcomes and Dynamic Scheduling in Cancer Screening.
27. NIH/NCI: 1R15 (Wu, D.) 10/2017
Project Title: Dynamic scheduling of the upcoming screening exam using a probabilistic risk model.
 28. NIH R21CA231050 (Li, Y.) 07/2018
Project Title: Fibroblast growth factor 21 prevents non-alcoholic steatohepatitis-associated HCC.
 29. NIH R21. (Liu, Y.) 10/2018
Project title: Zeb1 Regulation of Corneal Neovascularization
 30. DoD Investigator-Initiated Translational Research Award. (Dean, D.) 10/2019
Project title: Targeting Zeb1 in non-small cell lung cancer.
 31. Midwest Nursing Research Society Grant (Harding, F.) 10/2019
Project title: Assessing Preschoolers' Perceptions of Healthy Eating via Drawing and Food Identification.
 32. Sigma Theta Tau Nursing Society grant (Harding, F.) 01/2020
Project title: Factors Influencing Dietary Patterns in Central American Immigrants with Transient Residence.
 33. NIH R01. (Liu, Y.) 10/2020
Project title: Zeb1 regulation of corneal neovascularization
 34. NIH R01 (Wu, D.) 10/2021
Project Title: Estimation of onset age and sojourn time for ovarian cancer, and statistical inference for sensitivity, lead time, overdiagnosis, and optimal scheduling in ovarian cancer screening.
 35. NIH R01 (Liu, Y.) 06/2022
Project Title: Sphere-induced reprogramming of RPE cells to dual potential RPE stem-like cells

Conference Short Course Instructor

- The 2023 ICSA Applied Statistics Symposium, 6/10-6/14/2023. Instructor for the short course (four hours) titled: Modeling and Analysis of Cancer Screening Data.

Conference Presentations (as the presenting author)

- The 2023 ICSA Applied Statistics Symposium, 6/10-6/14/2023. Ann Arbor, Michigan. Title: A general method to schedule the upcoming exam in cancer screening. Invited talk.
- The Joint Statistical Meeting (JSM-2022), 8/6-8/11/2022. Washington, DC. Title: When to Initiate Cancer Screening Exam if Sensitivity Is a Function of Sojourn Time. Contributed talk.
- Symposium on Data Science and Statistics (SDSS) 2022, June 7-10, 2022. Pittsburgh, PA. Refereed section CS11 - Data Science in Clinical Contexts. Title: When to Initiate Cancer Screening Exam if Sensitivity Is a Function of Sojourn Time?
- International Biometric Society Eastern North American Region (ENAR) Spring Meeting, 03/14-03/17/2021. Virtual conference. Title: At what age should cancer screening be started? Also chaired session 93.
- Conference on Statistical Practice (CSP) 2021, 2/17-2/19/2021. Virtual conference. Session CS07: Health Care Applications. Title: At what age should cancer screening be started?
- Joint Statistical Meeting (JSM-2020), 8/2-8/6/2020. Virtual conference. Title: Sojourn Time and Age at Onset of the Preclinical State in Lung Cancer.
- Joint Statistical Meeting (JSM-2019), 7/27-8/1/2019. Denver, CO. Scheduling of the upcoming screening exam using CT in lung cancer. Contributed talk.

- 4th International Conference on Big Data and Information Analytics. Houston, TX. Dec. 17-19, 2018. Invited talk: Dynamic scheduling of the upcoming exam using existing screening data and personal screening history.
- International Conference on Health Policy Statistics (ICHPS-2018). January 10-12, 2018. Charleston, SC. Dynamic Scheduling for the Upcoming Exam in Cancer Screening. Invited talk in session CS25 – Statistical Methods for Cancer Screening Using Risk Prediction Models, Polygenic Risk Scores, and Simulations.
- Joint Statistical Meeting (JSM-2016), August 2016. Chicago, IL. Dynamic scheduling of the next exam in cancer screening. Contributed talk.
- Joint Statistical Meeting (JSM-2015), August 2015. Seattle, WA. Long term effects and overdiagnosis of CT scan in lung cancer. Contributed talk.
- Joint Statistical Meeting (JSM-2014), August 2014. Boston, MA. Inference of future screening outcomes for old people with a screening history. Contributed talk.
- Invited speaker, co-moderator, and session chair, International Conference and Exhibition on Biometrics and Biostatistics (Biometrics-2013). June 10-12, 2013. Chicago, IL. Inference of long-term effects and over-diagnosis in periodic cancer screening.
- Invited speaker and session chair, International Conference and Exhibition on Biometrics and Biostatistics (Biometrics-2012). March 5-7, 2012. Omaha, NE. Projection of long-term outcomes using x-rays and pooled cytology in lung cancer screening.
- International Chinese Statistical Association-Applied Statistics Symposium, June 26-28, 2011. New York City, NY. Evaluating long term outcomes of FOBT in Colorectal Cancer Screening.
- Joint Statistical Meeting, August 2010. Vancouver, Canada. A projection of true-early-detection, no-early-detection, over-diagnosis and not-so-necessary probabilities in tumor screening. Topic-contributed talk.
- Invited speaker at The International Workshop on Probability Theory, Statistics and Their Application to Biology. June 26-28, 2009, Beijing, P. R. China. Over-diagnosis and True-Benefit in Periodic Cancer Screening.
- International Biometric Society Eastern North American Region (ENAR) Spring Meeting, March 2009. San Antonio, TX. Bayesian Inference for Over-Diagnosis and True-Benefit in Periodic Cancer Screening.
- Joint Statistical Meeting, August 2008. Denver, CO. Estimating Benefits Due to FOBT in Colorectal Cancer Screening.
- International Biometric Society Eastern North American Region (ENAR) Spring Meeting, March 2008. Arlington, VA. Estimating Benefits Due to Fecal Occult Blood Test for Colorectal Cancer.
- International Biometric Society Eastern North American Region (ENAR) Spring Meeting, March 2007. Atlanta, GA. When Sensitivity Depends on Age and Time Spent in the Preclinical State in Periodic Cancer Screening.
- National Cancer Institute (NCI) Small Grants Program for Behavioral Research in Cancer Control Grantee Meeting. January 2007. Group Presentation title: Cancer Screening (Joint with 5 PIs from other funded projects: Judy Wang of Georgetown Univ., William Klein of Univ. of Pittsburgh, Hae-Ra Han of John Hopkins Univ., William Pirl from Massachusetts General Hospital, and Julie C. Weitlauf from Stanford Univ). With a poster section: Bayesian Inference of the Lead Time in Periodic Cancer Screening.
- Joint Statistical Meeting, August 2006. Seattle, WA. Bayesian Inference of the Lead Time in Periodic Cancer Screening.
- International Biometric Society Eastern North American Region (ENAR) Spring Meeting, March 2006. Tampa, FL. Bayesian Inference of the Lead Time in Periodic Cancer Screening.
- International Biometric Society Eastern North American Region (ENAR) Spring Meeting, March 2005. Austin, TX. Modeling the Relationship of Sojourn Time and Sensitivity in Periodic Screening.

- Joint Statistical Meeting, August 2004, Toronto, Canada. Statistical Inference for the Lead Time in Periodic Cancer Screening.
- International Biometric Society Eastern North American Region (ENAR) Spring Meeting, March 2001, Charlotte, NC. Bayesian Inference of Age-Specific Sensitivity, Sojourn Time and Transition Rate in Screening.
- Joint Statistical Meeting, August 2000, Indianapolis, IN. A Visually Adaptive Bayesian Model in Wavelet Regression.
- Interface, April 2000, New Orleans, LA. NORM Thresholding Method in Wavelet Regression.

Invited Colloquia and Research Seminar

- Department of Bioinformatics and Biostatistics Seminar, University of Louisville. 11/05/2021. Title: Dynamic scheduling of the upcoming screening when sensitivity is a function of sojourn time.
- R15 Summer Research Workshop: Applications in Medicine and Public Health, School of Public Health and Information Sciences, University of Louisville, 7/23/2021. Organizer and speaker of the one-day workshop. Title: When should heavy smokers take their first lung cancer screening?
- School of Public Health and Information Sciences Student Government Association (SGA) Seminar 2/17/2021. Virtual. Title: At what age should cancer screening be started?
- Department of Epidemiology and Biostatistics Seminar, Indiana University at Bloomington. 2/25/2019. Title: Dynamic scheduling of the upcoming exam using existing screening data and personal screening history.
- Department of Bioinformatics and Biostatistics Seminar, University of Louisville. August 31, 2018. Title: Dynamic scheduling of the upcoming exam using existing screening data and personal screening history.
- Dental School Oral Biology 605: Oral Health Seminar, University of Louisville, August 25, 2017. Title: Dynamic scheduling of the upcoming exam in cancer screening. Louisville, KY.
- University of Louisville Health Science Campus Chinese Faculty Seminar. July 1, 2017. Title: Probability modeling and statistical inference in cancer screening. Louisville, KY.
- Department of Bioinformatics and Biostatistics Seminar, University of Louisville. November 6, 2015. Title: Inference of Long Term Outcomes and Over-diagnosis in Periodic Cancer Screening
- Invited speaker at ASA KY Chapter meeting, January 10, 2013, at Lexington, KY. Title: Inference of long-term effects and over-diagnosis in periodic cancer screening.
- Biostatistics-Decision Science Seminar, Department of Bioinformatics and Biostatistics, University of Louisville. September 21, 2012. Title: The lead time distribution when lifetime is subject to competing risks in cancer screening.
- Research seminar series, Department of Mathematical Sciences, Indiana University Purdue University at Indianapolis (IUPUI). March 31, 2010. Title: A Projection of Over-Diagnosis, True-Benefit, No-Benefit, and Unnecessary in Periodic Cancer Screening.
- Biostatistics-Decision Science Seminar, University of Louisville. January 29, 2010. Title: A Projection of Over-Diagnosis, True-Benefit, No-Benefit, and Unnecessary in Periodic Cancer Screening.
- Research colloquia, College of Mathematics and Statistics, Shandong University at Weihai, P. R. China. 7/8/2009. Title: Bayesian Inference of the Lead Time in Periodic Cancer Screening.
- Research colloquia, College of Mathematics Science, Shandong Normal University, P.R.China 7/3/2009. Title: Bayesian Inference of the Lead Time in Periodic Cancer Screening.
- Research colloquia, Dept of Statistics, Purdue University, 10/9/2008. Title: Estimate long-term benefit in periodic cancer screening.
- Departmental Research Seminar, University of Louisville. April 2008. Title: Estimating Benefits Due to Fecal Occult Blood Test for Colorectal Cancer.

- Research incubation talk, School of Public Health and Information Sciences, University of Louisville. December 2007. Title: A Few Research Projects in Periodic Cancer Screening.
- Dept. of Bioinformatics and Biostatistics, University of Louisville. Louisville, KY. May 2007. Title: Bayesian Inference of the Lead Time in Periodic Cancer Screening.
- Dept. of Statistics, Kansas State University. Manhattan, KS. February 2007. Title: Bayesian Inference of the Lead Time in Periodic Cancer Screening.
- Dept. of Biostatistics, St. Jude Children's Research Hospital. Memphis, TN. Jan 2007. Title: Bayesian Inference of the Lead Time in Periodic Cancer Screening.
- Dept. of Mathematics, University of Mississippi, Oxford. MS. November 2006. Title: Estimate benefits for women in periodic breast cancer screening.
- Dept. of Math and Statistics, Mississippi State University. April 2006. Title: Bayesian Inference of the Lead Time in Periodic Cancer Screening.
- Institute of Mathematical Statistics, Peking University. P.R. China. June 2005. Title: MLE and Bayesian Inference of Age-Dependent Sensitivity and Transition Probability in Periodic Screening.
- School of Mathematics & System Science, Shandong University, May 2005, Jinan, P. R. China. Title: MLE and Bayesian Inference of Age-Dependent Sensitivity and Transition Probability in Periodic Screening.
- Dept. of Biostatistics, Univ. of Texas, M.D. Anderson Cancer Center, May 2001. Title: Bayesian inference of age-dependent sensitivity, sojourn time and transition rate in cancer screening.
- Dept. of Math and Statistics, Mississippi State University, March 2001. Title: Testing the Independence of Two Periodic Diagnostic Tests.
- Dept. of Biostatistics and Applied Math., Univ. of Texas, M.D. Anderson Cancer Center, December 2000. Title: Hypothesis Testing of Age-Specific Sensitivity and Age-Specific Mean Sojourn Time in Cancer Screening Test.
- Dept. of Biostatistics and Applied Math., Univ. of Texas, M.D. Anderson Cancer Center, July 2000. Title: Estimation and Inference of the Conditional Dependency on Cancer Screening Modalities.
- Dept. of Biostatistics, Univ. of Texas, M.D. Anderson Cancer Center, October 1999. Title: NORM Thresholding Method in Wavelet Regression.
- Dept. of Statistics, Univ. of California, Riverside, October 1999. Title: NORM Thresholding Method in Wavelet Regression.

Poster Presentation

- Research!Louisville 2022, Louisville, KY. September 22, 2022. Title: At what age should a cancer screening exam be started?
- Research!Louisville 2017, Louisville, KY. September 14, 2017. Title: Dynamic scheduling of the upcoming exam in cancer screening. UofL.
- KY Lung Cancer Symposium 2016. October 15, 2016. Lexington, KY. Poster: long term effects and overdiagnosis via CT in lung cancer.
- UT-KBRIN Bioinformatics Summit 2016. April 2016, Cadiz, KY. Poster: long term effects and overdiagnosis via CT in lung cancer.
- Research!Louisville 2015. Louisville, KY. October 29, 2015. Title: long term effects and overdiagnosis of CT scan in lung cancer.
- UT-KBRIN Bioinformatics Summit 2015. March 2015, Buchanan, TN. Long-term screening outcomes for aged people with a screening history.
- Brown Cancer Center Annual Retreat 2012. Oct. 26, 2012. Louisville, KY. The lead time distribution when lifetime is subject to competing risks in cancer screening.
- Brown Cancer Center Annual Retreat 2011. Oct. 28, 2011, Louisville, KY. Projection of Long-term Outcomes Using X-rays and Pooled Cytology in Lung Cancer Screening.

- Brown Cancer Center Annual Retreat 2011. Oct. 28, 2011, Louisville, KY. Efficacy of Dual Lung Cancer Screening by Chest X-ray and Sputum Cytology using Johns Hopkins Lung Project Data
- Research!Louisville 2011. October 13, 2011, Louisville, KY. Projection of Long-term Outcomes Using X-rays and Pooled Cytology in Lung Cancer Screening.
- Research!Louisville 2011. October 13, 2011, Louisville, KY. Efficacy of Dual Lung Cancer Screening by Chest X-ray and Sputum Cytology using Johns Hopkins Lung Project Data.
- Brown Cancer Center Annual Retreat 2010. October 2010, Louisville, KY. True early detection and overdiagnosis in colorectal cancer screening.
- Brown Cancer Center Annual Retreat 2009. October 2009, Louisville, KY. A projection of over-diagnosis, true-benefit, no-benefit, and unnecessary in periodic cancer screening.
- Research!Louisville 2009. October 2009, Louisville, KY. Bayesian inference of over-diagnosis and true-benefit in periodic cancer screening.
- Research!Louisville 2008. October 2008, Louisville, KY. Estimate long-term benefits in periodic cancer screening.
- Brown Cancer Center Annual Retreat 2008. October 2008, Louisville, KY. Estimate long-term benefits in periodic cancer screening.
- The 60th International Convention of Forest Products Society. Newport Beach, CA. June 25 – 28, 2006. Modeling moisture absorption process of wood-based composites under over-saturated moisture conditions using two-part equations.
- Intellectual Property Forum and Technical Expo. Jackson, MS, December 2004. Poster and Computer software demo, title: Estimate Benefits for Periodic Breast Cancer Screening.
- Poster section in ENAR 2005. Austin, TX. March 2005. Title: Variance component estimation using the ADAA model when genetic designs are partial and complete.

Teaching

1. *Classroom Teaching (lectures only, not including independent study, seminar or field practicum courses)*

At Mississippi State University (2001-2007):

<u>Year</u>	<u>Semester</u>	<u>Courses Taught</u>
2001-2002	Fall	Intro Math Stat I, MA/ST 4543/6543
	Fall	Stat Methods, ST8114
	Spring	Intro Math Stat II, MA/ST 4573/6573
	Spring	Applied Probability, ST 8533
2002-2003	Fall	Intro Math Stat I, MA/ST 4543/6543
	Fall	Stat Methods, ST8114
	Spring	Intro Math Stat II, MA/ST 4573/6573
	Spring	Applied Probability, ST 8533
2003-2004	Fall	Prob. & Random Process, MA 4533/6533
	Fall	Stat Methods, ST8114
	Spring	Applied Probability, ST 8533
	Spring	Intro Probability, ST/MA 4523/6523
2004-2005	Fall	Statistical Computation, ST 8353
	Fall	Intro Probability, ST/MA 4523/6523
	Spring	Prob. & Random Process, MA 4533/6533
	Spring	Applied Probability, ST 8533
2005-2006	Fall	Prob. & Random Process, MA 4533/6533
	Fall	Intro Probability, ST/MA 4523/6523

2006-2007	Spring	Prob. & Random Process, MA 4533/6533
	Fall	Prob. & Random Process, MA 4533/6533
	Fall	Intro to Statistical Inference MA/ST3123
	Spring	Prob. & Random Process, MA 4533/6533

At University of Louisville (2007---Present):

<u>Year</u>	<u>Semester</u>	<u>Courses Taught</u>
2007-2008	Fall	Probability, PHST 661
	Spring	Bayesian Inference, PHST 691
2008-2009	Fall	Probability, PHST 661
	Spring	Mathematical Statistics, PHST 662
	Spring	Bayesian Inference, PHST 691
2009-2010	Fall	Probability, PHST 661
	Spring	Mathematical Statistics, PHST 662
2010-2011	Fall	Probability, PHST 661
	Spring	Mathematical Statistics, PHST662
	Spring	Nonparametric Statistics, PHST 780
2011-2012	Fall	Probability, PHST 661
	Spring	Bayesian Inference, PHST 691
2012-2013	Fall	Probability, PHST 661
	Spring	Bayesian Inference, PHST 691
	Spring	Mathematical Statistics, PHST662
	Summer	Special Topics, PHST 671 Prob. modeling and stat. inference in cancer screening
2013-2014	Fall	Survival Analysis, PHST 683
	Spring	Mathematical Statistics, PHST662
	Summer	Special Topics, PHST671 Prob. modeling and stat. inference in cancer screening
2014-2015	Fall	Survival Analysis, PHST 683
	Fall	Biostatistical Method I, PHST680
	Spring	Advanced Clinical Trials, PHST 724
	Spring	Mathematical Statistics, PHST662
2015-2016	Fall	Survival Analysis, PHST 683
	Fall	Biostatistical Method I, PHST680
	Spring	Mathematical Statistics, PHST 662
	Summer	Special Topics, PHST671 Prob. modeling and stat. inference in cancer screening
2016-2017:	Fall	Multivariate Statistical Analysis, PHST 682
	Fall	Survival Analysis, PHST 683
2017-2018:	Spring	Bayesian Inference, PHST 691
	Spring	Advanced Clinical Trials, PHST 724
	Fall	Survival Analysis, PHST 683
2018-2019:	Spring	Bayesian Inference, PHST 691
	Fall	Survival Analysis, PHST 683
	Spring	Bayesian Inference, PHST 691
2019-2020:	Spring	Advanced Clinical Trials, PHST 724
	Fall	*Statistics Study Design and Research, PHST 440
	Spring	Bayesian Inference, PHST 691
2020-2021:	Summer	Math Tools III, PHST 563
	Fall	*Statistics Study Design and Research, PHST 440

	Spring	Bayesian Inference, PHST 691
	Spring	Intermediate Statistical Analysis, PHST 302
	Summer	Math Tools III, PHST 563
2021-2022:	Fall	Clinical Trials I-Planning and Design, PHST 624
	Spring	Bayesian Inference, PHST 691
	Spring	Clinical Trials II, PHST 625
2022-2023:	Fall	Clinical Trials I-Planning and Design, PHST 624
	Spring	Clinical Trials II, PHST 625
	Spring	Intermediate Statistical Analysis, PHST 302
	Spring	Advanced Clinical Trials, PHST 724

*: only 1 student registered and dropped out after a few weeks and the class was closed early.

2. *Major Professor for Ph.D. Students:*

- Ruiqi Liu. Ph.D. dissertation: Estimation of the three key parameters and lead time distribution in lung cancer screening. Graduated in August 2017.
- Xiaohong Li (co-advisor with Dr. Shesh N. Rai). Ph.D. dissertation: Sample size calculations and normalization methods for the analysis of RNA-seq Data. Graduated in December 2017.
- Farhin Rahman, current Ph.D. student. Expected graduation July 2023.
- Christina Pinkston, co-advisor with Dr. Shesh N. Rai.

3. *Major Professor for M.S. Students, CREST program, and MPH.*

At **University of Louisville:** (2007- present)

- Yinlu Chen. MS Biostat. Thesis: Breast Cancer Screening Model – Application to the Canadian Study. August 2009.
- Rona Jeannie Roberts (CREST program). Project: Effect of long-acting naltrexone on adherence to recommendation for treatment. April 2010.
- Chengxin Li. MS Biostat. Thesis: The statistical effects of measuring myocyte with different image zoom rates. August 2010.
- Xinyuan Duan. MS Biostat. Thesis: Evaluate experiences necessary to achieve proficiency in advanced fiberoptic intubation skills-can we accelerate the learning curve with simulator training? December 2010.
- Muhammad Babar (CREST program). Project: Effect of remote telemedicine intensive care unit monitoring program on clinical outcomes. December 2011.
- Dianhong Luo. MS Biostat. Thesis: The trend and disparities in the diagnosis of breast cancer by mobile mammography at a comprehensive cancer center. August 2012.
- Vikranth Shetty. MS Biostat. Thesis: Analysis of microRNA microarray (MM chip) data for aging mice models. August 2012 (joint advisor with Dr. Shesh N. Rai).
- Jiyiing Ling. MS Biostat. Thesis: Preliminary assessment of a school-based healthy lifestyle program among rural children. May 2013.
- Sarah K. Kendrick. MS Biostat. Thesis: Simulation study for the lead time in cancer screening when human lifetime is a competing risk. May 2013.
- Dengzhi Wang. MS Biostat. Thesis: Estimate of the sojourn time and transition density in the PLCO – lung cancer study. May 2017.
- Alexander Lee. MPH project. May 2015.
- Erin Schumer. MPH project. May 2015.
- Charles Kimbrough project. MPH. May 2015.

- Stephen P. Furmanek project. MPH. May 2015.
- Kahir Sabri Jawad. MPH project. May 2016.
- Nislan Jose. MPH project. May 2016.
- Nawal Ali Yaqoub project. May 2021.

At **Mississippi State University**, all MS in Statistics: (2001-2007)

- Xuhong Liu. Thesis title: Periodic Screening for Breast Cancer. December 2002.
- Jixiang Wu. Thesis title: Complex Trait Analyses by Mixed Linear Model Approach: Methodology and Application. May 2003. Currently an associate professor of Plant Science, South Dakota State University.
- Wen-hsiung (Richard) Chou. Thesis title: Discrete Choice Modeling: Multinomial Logit Model. May 2003.
- Dongyu Ying. Thesis title: Statistical Inference for the Breast Cancer Control Data. May 2004.
- Justin Shows. Thesis title: Lead Time Estimation in Cancer Screening. Currently an assistant teaching professor at Dept. of Statistics, University of Missouri. May 2004.
- Xiaoying Tan. Thesis title: Applications in Periodic Cancer Screening Model -- MLE, MCMC Simulations and Bootstrap Sampling. December 2006.
- Changshun Li. Thesis title: A Review of Colorectal Cancer Screening with Fecal Occult Blood Test. August 2007.

4. ***Minor Professor for MS Students***

YoungHa Ki	Business Administration, MSU	2004
Abdud Dahian	Biomedical Engineering, MSU	2005
Nga-Yi (Diana) Chan	Computer Science, MSU	2006

5. ***Member of M.S. Committee*** *Year degree granted*

Yuan Xiang	Statistics, MSU	2001
Robin Luo	Statistics, MSU	2002
Chunjie Dai	Statistics, MSU	2002
Huiqin Yang	Statistics, MSU	2002
Gensheng Shi	Statistics, MSU	2002
Hui-Ping Chan	Statistics, MSU	2002
Li Dong	Statistics, MSU	2003
Liyan Xu	Statistics, MSU	2003
Yi-Chen Chen	Statistics, MSU	2003
Hongying Fan	Statistics, MSU	2003
Kyoung Kim	Statistics, MSU	2004
Zhenyu Liu	Statistics, MSU	2005
Qi Yao	Statistics, MSU	2006
Yijun Sun	Statistics, MSU	2006
Shu-Wei Fang	Statistics, MSU	2007
Wenjuan Song	Statistics, MSU	2007
Xiaoyan Chu	Statistics, MSU	2007
Chikelue I. Oragwu	CREST, UL	2012
Mostafa O. El-Refai	CREST, UL	2012
Ruiqi Liu	Biostatistics, UL	2013
Archana Rai	Biostatistics, UL	2013
Kristopher Gardner	Biostatistics, UL	2014
Derek Childers	Biostatistics, UL	2015

6. *Member of Ph.D. Committee*

Jixiang Wu	Agronomy, MSU	2003
Raie-Kuan Chang	Education, MSU	2003
Rong Zhou	Computer Science, MSU	2005
Qinyu Liao	Business, MSU	2005
Lin Zhang	Business, MSU	2006
Xiaoqin Wu	Mathematics, MSU	2006
Johnnie Sue Cooper	Nursing, U. Mississippi Medical Center	2008
Mourad Atlas	Bioinformatics and Biostatistics, UL	2009
Vasyl Pihur	Bioinformatics and Biostatistics, UL	2009
Jieru Xie	Bioinformatics and Biostatistics, UL	2009
Christopher N. Barnes	Bioinformatics and Biostatistics, UL	2010
Guanying Ru	Electrical and Computer Engineering, UL	2014
Alex Cambon	Bioinformatics and Biostatistics, UL	2015
Yubing Wan	Bioinformatics and Biostatistics, UL	2015
Dake Yang	Bioinformatics and Biostatistics, UL	2016
Jasmit Shah	Bioinformatics and Biostatistics, UL	2017
Heng Li	Mathematics, UL	2017
Arinjita Bhattacharyya	Bioinformatics and Biostatistics, UL	2020
Rachana Lele	Bioinformatics and Biostatistics, UL	2021

Professional Activities

• **Administrative Services:**

At University of Louisville:

- Director, Master's Program, Department of Bioinformatics and Biostatistics, 07/2009-07/2012.
- SPHIS Faculty Forum Committee, 07/2009-06/2013.
- SPHIS Academic Affair Committee, 07/2009-03/2012.
- SPHIS Curriculum Committee, 07/2009-07/2012.
- Biostat. Department Undergrad Minor Committee, 04/2018-present.
- University Faculty Grievance Committee, 07/2018-06/2024.
- SPHIS Budget Committee, 2018-2019.

At Mississippi State University:

- University Academic Review Board, 2002-2003.
- University Grievance Panel, 2005-2007.
- Departmental Statistics Committee, 2001-2007.
- Departmental Computing and Technology Committee, 2001-2007.
- Departmental Assessment Committee, 2005-2007.
- Departmental Evaluation of Teaching Assistants Committee, 2005-2007.

• **Member:**

- American Statistical Association (ASA)
- International Biometric Society-East North American Region (ENAR)
- International Chinese Statistical Association (ICSA)

• **Editorial Services**

- Editor-in-Chief, *Open Access Medical Statistics*, 03/2011-06/2018.
- Editor-in-Chief, *Journal of Biometrics and Biostatistics*, 07/2010-10/2017.
- Editorial board member, *Journal of Cancer Science & Therapy*, 08/2010-present.
- Editorial board member, *Journal of Modern Applied Statistical Methods*, 2002-2010.
- Editorial board member, *Annals of Biometrics and Biostatistics*, June 2013-present.
- Editorial board member, *Journal of Medical Statistics and Informatics*, July 2013-present.

- **Reviewer/Judge/Organizer**

- National Institute of Health (NIH) ZRG1 HDM-V (02). Special Emphasis Panel, Healthcare Delivery and Methodologies. 3/22/2022.
- Organizer of the R15 Summer Research Workshop at the School of Public Health and Information Sciences, University of Louisville, 7/23/2021.
- National Institute of Health (NIH) 2021/10 ZRG1 HDM-A (02) M. Clinical Data Management and Informatics Research. Agenda Seq Num – 425613. 7/15/2021.
- National Institute of Health (NIH), Clinical Informatics and Digital Health Study Section, Healthcare Delivery and Methodologies Integrated Review Group. Agenda Seq Num-409821, 3/8-3/9/2021.
- Pennsylvania Department of Health Formula Grants Final Performance Review - 18-19 Cycle A. February 15, 2019.
- National Institute of Health (NIH), ZRG1 PSE-A (02) S: Chronic Disease and Epidemiology. Teleconference R01. SRO: Delia O. Sam. Nov. 1, 2018.
- National Institute of Health (NIH), Special Emphasis Panel, PSE D-02: Epidemiology of Chronic and Infectious Disease. Teleconference R01. SRO: Heidi Friedman. 03/05/ 2018.
- Florida Department of Health, Live Like Bella Pediatric Cancer Review 17-18. 02/14/2018. Teleconference.
- The Xing Leadership Award, 2017, 2018, 2019, 2020, 2021 Review board, Peking University alumni: <http://www.xingmemorialfund.org/xingleadershipawardreviewboard.html>
- Patient-Centered Outcome Research Institute (PCORI), merit review panel, Improving Methods for Conducting PCOR (Pure Analytics) of Spring 2015 funding cycle. Meeting date Aug. 6-7, 2015, Washington DC.
- Patient-Centered Outcome Research Institute (PCORI), merit review panel, Improving Methods for Conducting PCOR (Pure Analytics) of Fall 2014 funding cycle. Meeting date Feb. 5-6, 2015 in Washington DC.
- National Institute of Health (NIH), Special Emphasis Panel, ZRG1 PSE-R (80), AREA: Population Sciences and Epidemiology. R15 Teleconference. Meeting date: 11/13/2014.
- National Institute of Health (NIH), Special Emphasis Panel, ZRG1 PSE-Q (80), AREA: Population Sciences and Epidemiology. R15 Teleconference. Meeting date: 07/10/2014.
- National Institute of Health (NIH), Special Emphasis Panel, ZRG1 PSE-D (90)A, Population Studies and Epidemiology AREA Review. R15 Teleconference. Meeting date: 3/13/2013.
- National Institute of Health (NIH/PCORI), panel member (onsite) for ZRG1 BDCN-M (70) R, PCORI Pilot Project merit review, meeting date: 2/21/2012 in Washington DC.
- Medical Research Foundation, UK. Williams Barker Bequest: Cancer Research. Reviewer of grant application. 01/2012. Mail review member.
- National Institute of Health (NIH), Special Emphasis Panel, mail review member for study sections: ZRG1 PSE-C (58) R and ZRG1 PSE-J (58) R, Challenge grants proposals review, 05/2009.
- Judge for Research! Louisville, 2008, 2009, 2011, 2012, 2015, 2019.
- Educational Testing Service (ETS) AP reader of Statistics, 06/05/2009-06/11/2009. Louisville Convention Center, KY.

- Chaired a session at the Women in Statistics and Data Science 2018. Cincinnati, OH. 10/19/2018.
 - Chaired sessions at the Joint Statistical Meeting (JSM) 2006, 2010.
 - Chaired a session at the International Conference and Exhibition on Biometrics and Biostatistics (Biometrics-2012), 03/2012.
 - Secretary and board member, 08/2018-7/2020, International Christian Statisticians.
<https://community.amstat.org/csidg/home>.
- **Journal Referee**
 - *Journal of American Statistical Association (JASA)*
 - *The Annals of Applied Statistics*
 - *Biometrics*
 - *Statistics and Its Interface*
 - *Computational Statistics and Data Analysis*
 - *Statistics in Medicine*
 - *Statistical Methodology*
 - *Communication in Statistics – Simulation and Computation*
 - *Communication in Statistics – Theory and Methods*
 - *Journal of Biometrics and Biostatistics*
 - *American Journal of Epidemiology*
 - *BioMed Central (BMC) Cancer*
 - *BMC Pulmonary Medicine*
 - *Information Sciences*
 - *Quality of Life Research*
 - *Cancer*
 - *Diagnostics*
 - *Journal of Epidemiology and Global Health*
 - *Breast Cancer: Targets and Therapy*
 - *World Journal of Clinical Oncology*
 - *BMJ-Open*
 - *Forensic Sciences Research*
 - *Cancer Medicine*
 - *Clinical Epidemiology*
 - *Scientific Reports*
 - *Journal of Classification*
 - *Journal of Medical Screening*
 - **Book Reviewer**
 - *Prentice Hall*
 - *W.H. Freeman and Company*
 - *Wiley*

Computing Skills:

- Operating Systems: Unix/Linux, Windows.
- Programming Languages: C/C++, S-PLUS/R/RStudio, SAS, SPSS, FORTRAN, Java, etc.
- Others: La/Tex, HTML, MinGW, X/Emacs, etc.